**In The Claims:**

**Claims 1-3 (canceled)**

4. (original) A linear tuning varactor circuit, comprising:

a plurality of single-end varactor circuits, each having a tuning terminal and a reference voltage terminal, the single-end varactor circuits coupled in series, a tuning terminal of a first single-end varactor circuit adapted to receive a tuning voltage for tuning a capacitanceof the varactor circuit, a reference voltage terminal of a last single-end varactor circuit adapted to receive a reference voltage as a reference level; and

a voltage divider, having a first terminal, a plurality of voltage dividing terminals and a second terminal, the first terminal coupled to the tuning terminal of the first single-end varactor circuit, the second terminal coupled to the reference voltage terminal of the last single-end varactor circuit, wherein the voltage dividing terminals of the voltage divider are coupled to nodes of the single-end varactor circuits, and each of the voltage dividing terminals has a divided voltage, which results from dividing a voltage difference between the tuning voltage and the reference voltage by the voltage divider with a pre-set voltage dividing ratio.

5. (original) The linear tuning varactor circuit of claim 4, wherein the single-end varactor circuits further comprise connecting terminals, a connecting terminal of a second single-end varactor circuit is coupled to the reference voltage terminal of the first single-end varactor circuit, a reference voltage terminal of the second single-end varactor circuit is coupled to a connecting terminal of a third single-end varactor circuit, and the others follow a connection similar thereto.

6. (original) The linear tuning varactor circuit of claim 5, wherein, except for the first single-end varactor circuit, the tuning terminals of the single-end varactor circuits are coupled to the voltage dividing terminals of the voltage divider.

7. (original) The linear tuning varactor circuit of claim 4, wherein the voltage divider further comprises a plurality of resistors coupled in series, a terminal of a first resistors is coupled to the first terminal, a terminal of a last resistor is coupled to the second terminal, and nodes of resistors are to the voltage dividing terminals.

**Claims 8-20 (canceled)**